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SERIE RESEARCH MEMORANDA

Tourism, Marketing and Telecommunication A Road towards Regional Developement

Peter Nijkamp

Research Memorandum 1998-28



Abstract

Starting from the concept of a global tourist village, this paper highlights the rapidly increasing role of international tourism in sustainable development. The paper argues that a balance has to be found between economic growth and ecological preservation of tourist areas. The level of tourist expenditures is to be evaluated against the social costs of the sector concerned. The paper offers also some numerical results on a meta - analytical experiment on tourist income multipliers in various tourist areas.



1. The Global Tourist Village

Tourism is part of the leisure sector which is rapidly gaining economic importance. The volume of tourist flows at a world – wide level is showing a continued growth path, mainly as a result of income increase and improvement of transport systems (cf. Pearce, 1981). People are travelling more frequently and over longer distances for leisure purposes. Our world tends to become a global tourist village. Remote destinations are in easy reach and the modern telecommunications sector offers direct information access to such destinations.

The distribution of tourist flows over different destinations varies and is dependent on various factors (see Pearce, 1981):

- attractions (e.g., monuments, natural parks, beaches)
- accessibility (e.g., air connections, road infrastructure)
- accommodation (e.g., hotels, camping places)
- infrastructure (e.g., sewage systems, telecommunications)
- suprastructure (e.g., restaurants, banks, hospitals)

Clearly, these factors are not given, but can be influenced by local, regional or national authorities in various ways (see Burns and Holden, 1995). Examples of such facilitating and flanking policies are: the creation of a flexible legal framework (e.g., visa regulations), the provision of transport facilities, the supply of support services (e.g. clean water), the establishment of land use zoning for tourist purposes, the provision of financial and fiscal incentives, and the design of marketing tools (training of personnel, tourist information's or coordination of marketing efforts).

An active – and even pro-active – tourist policy is necessary, as the demand for tourist products in various locations shows a clear life cycle: a new tourist destination is explored and discovered, it attracts adventurous tourism, followed by mass tourism, while next it shows signs of saturation and decline (see also Prosser, 1994).

Tourist inflow in
a given destination

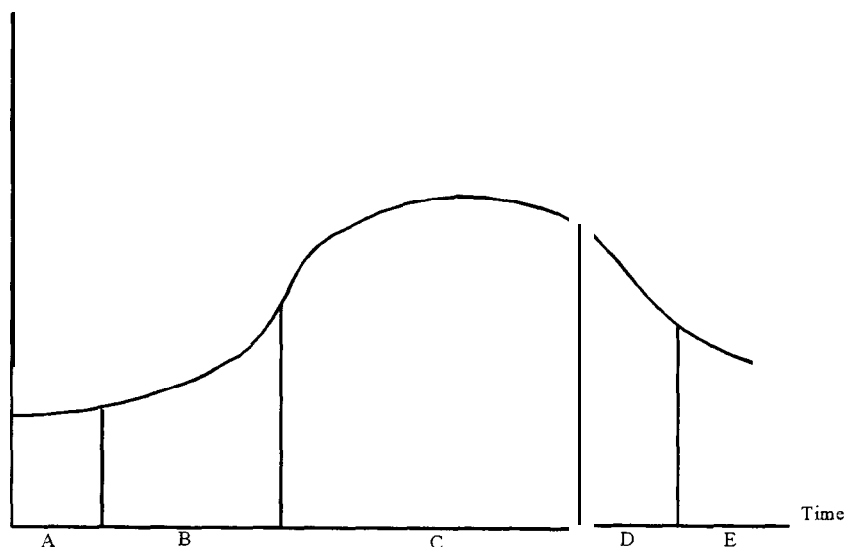


Figure 1. The tourist life cycle

A: discovery

B : growing popularity

C: fashion and saturation

D: fading fashion

E: decline

Prosser argues that the dynamics in the choice of tourist destinations is caused by three motives: conspicuous consumption of an elite class, successive class interventions of lower income classes imitating the elite's behaviour, and the expansion of the tourism frontier (or 'pleasure periphery'). Consequently, there are waves of tourism all over the world. This phenomena can easily be depicted in a tourist life cycle figure which maps out the various stages of tourist demand at a certain holiday destination (see Figure 1). This life cycle incorporates clearly distinct classes of tourists who have their own specific behaviour in the various stages of the tourist life cycle, viz. explorers, off - beat adventurers, elites, early mass and mass package tourists.

Against the previous background observations, it is plausible that, with a growing welfare and a world - wide improvement of transport systems, the demand for tourism will continue to grow and also to become increasingly differentiated. At the supply side, there will be more market specialisation and segmentation (see also Amelung 1997).

2. The Magic of Tourism

In the eyes of many decision-makers and politicians tourism has a magic potential. It generates income and is based on indigenous resources of the tourist areas at hand. Tourism has indeed been a rapidly growing sector and a wide-sweeping socio-economic phenomenon with broad economic, social, cultural and environmental consequences. It is likely that tourism will continue to dominate the international scene for many years to come. Nevertheless, there seems to be significant structural changes in tourist demand which are likely to influence the traditional model of 'mass tourism', as the sector has been experiencing dramatic changes over the last few years in response to broader patterns of globalization of economic activities. There is growing evidence of an emerging new tourist 'profile' in connection with the change in view and behavioural patterns of all 'actors' involved in planning and management of the tourist industry as well as new trends taking place not only in the area of demand but also in the interrelated area of supply (see Coccossis and Nijkamp, 1995).

In a short period of time, international tourist demand in Europe increased from 113 million arrivals in 1970 to 196 million in 1980 and to 275.5 million in 1990. It is forecasted that the growth of tourism will continue to rise to about 340 million tourist arrivals in Europe in the year 2000. This rapid increase in demand has created - and will create - several positive and negative impacts on the economy, society and environment of tourist countries and regions.

Over the past forty years tourism has become a major activity in our society and an increasingly important sector in terms of economic development. It forms an increasing share in discretionary income and often provides new opportunities for upgrading local environment. Tourism is increasingly regarded as one of the development vehicles of a region, while it is an important growth sector in a country's economy. However, much empirical evidence has also shown the negative effects of tourism, in particular on the environment. A new concept which has begun to dominate the tourism debate in recent years is that of 'sustainable development' (see Giaoutzi and Nijkamp, 1994).

The idea of **sustainable tourism development** is now a popular concept and refers to allowing tourism growth while at the same time preventing degradation of the environment, as this may have important consequences for future quality of life. In this context, Buhalis and Fletcher (1992) quote Goodall who has suggested that sustainable tourism requires that *"the demand of increasing numbers of tourist is satisfied in a manner which continues to attract*

them whilst meeting the needs of the host population with improved standards of living, yet safeguarding the destination environment and cultural heritage ”.

Tourism is thus not only a rapidly rising economic activity, on all continents, in countries and regions, but it is also increasingly recognized that this new growth sector has many adverse effects on environmental quality conditions. In the context of the world-wide debate on sustainable development there is also an increasing need for a thorough reflection on sustainable tourism, where the socio-economic interests of the tourist sector are brought into harmony with environmental constraints, now and in the future. Tourism is intricately involved with environmental quality, as it affects directly the natural and human resources and at the same time is conditioned by the quality of the environment. Such a relationship has important implications from the point of view of policies, management and planning.

Tourism is thus a double-edged sword. It may have positive economic impacts on the balance of payments, on employment, on gross income and production. Also, tourism development may be seen as a main instrument for regional development, as it stimulates new economic activities (e.g. construction activities, retail shopping) in a certain area. Nevertheless, because of its complexity and connection with other economic activities, the direct impact of tourism development on a national or regional economy is difficult to assess. Clearly, a careful assessment of the environmental impacts of tourism is very important, because tourists tend to be attracted to the more fragile environments, for example, small islands, centres of high historical and cultural value, and coastal zones. Tourist development thus poses special problems for environmental resources which are ‘exploited’ by tourism. The use of such environmental resources for tourism has two consequences. The quantity of available resources diminishes and this, in turn, limits a further increase of tourism. Besides, the quality of resources deteriorates, which has a negative influence on the tourist product,

Tourism and the environment are thus interdependent. The environment is one of the most important factors in the tourist product, as the quality of this product depends on the quality of the environment, which is the basis for attracting visitors and hence has to be conserved. Tourist development depends then on a proper handling of this close relationship between tourism and the environment. Therefore, it is necessary to examine both the (regional-) economic and environmental impacts of tourism with a view on the implementation of a balanced tourist policy. This will be the subject matter of Sections 3 and 4, respectively.

3. Economic Impacts of Tourism

It goes without saying that tourism induces changes in many areas, not only socio-economic, but also environmental. In this section we will address in particular the effect on the national and regional economy. The assessment of such effects is however, fraught with many difficulties, as the tourist sector comprises a complex set of interlinked activities, such as travel, accommodation, catering, shopping etc. (see for details Briassoulis, 1995). Consequently, in a strict sense tourism cannot be considered as a specific sector or industry; it is essentially a complex ramification of economic activities which in combination determine the quantity or quality of the tourist product of an area. Thus, given the multi-activity and multi-sectoral nature of tourism, the sectors constituting tourism contribute differently to the production and consumption of the tourist product. Firms in the tourist sector are numerous, offering various types of product and each one contributing to the quality of the tourist product. This product is thus a ‘ packaged’ selections of element which are decisive for the perceived attractiveness of a tourist place. This also means that the determinations of a single unambiguous price for the tourist product is almost impossible. Consumers face a multi-

product and multi-priced set of amenities, on which they do not have perfect information and free choice, so that they tend to take sub-optimal decisions. And finally, the tourist product is a mix of private and public goods which complicates the application of purely public or purely private sector policies for the control of its quality and impacts. An additional complication is that the tourist sector has the typical features of a seasonal activity which may lead to discontinuous economic impacts. In summary, the tourist demand is dynamic, fluctuating over space and time as a result of frequent changes in tourist preferences and marketing policies.

The socio-economic effects of tourism are manifold and can be classified as follows (see Pearce, 1991):

- ☐ balance of payments: tourism is essentially an export good which brings in foreign currency, although foreign tourist operators, promotion campaigns abroad etc. may reduce the net benefits for the balance of payments.
- ☐ regional development: tourism also addresses peripheral areas and hence spreads economic activity more evenly over the country.
- ☐ Diversification of the economy: given the multi-faceted nature of the tourist sector, it may help to build up a robust economic development.
- ☐ income levels: the income effects of tourism are twofold: building / construction and operations. This may also explain variation in income multipliers (see later)
- ☐ state revenue: the state earns revenues due to tax collection, although it has to be recognized that also significant outlays for the infrastructure may be needed.
- ☐ employment opportunities: tourism is rather labour – intensive and requires also much unskilled and semi-skilled labour, which offers great opportunities for less favoured regions.

The extent to which these effects will manifest themselves varies a lot and is dependent on the stage of the tourist life cycle, local tourist policy strategies and the use of sophisticated communication technology in promotion campaigns. In all cases, the quality of the tourist product offered is decisive for the economic impact on the local a regional economy. In this context, a keen marketing strategy is of utmost importance, as such a strategy has to ensure the best possible match between the tourist's aspiration level and the opportunity set of the tourist's resources and attributes.

4. Environmental Impacts of Tourism

The benefits of the tourist sector have to be compared with the social cost imposed by this sector. The environmental consequences of tourism are often manifold; they do not only manifest themselves in terms of noise or pollution, but also in terms of destruction of landscape, a decay in the quality of cultural heritage, or even a destruction of local communities. Several of these impacts are irreversible, while in many cases the social costs are not charged to the tourist. Thus, tourism is a typical example of an industrial sector which depends on natural and cultural resources and which threatens to erode the basis of its activities (cf. Bramwell et al., 1995). According to Buckley (1994), there are four links between tourism and the environment:

- ☐ components of the natural environment as the basis for a marketable tourism attraction or product
- ☐ management of tourism operations so as to minimize or reduce their environmental impacts
- ☐ economic or material contribution of tourism to conservation

- attitude of tourist towards the environment and environmental education of clients by tourist operators.

Given the multidimensional dynamic complexity of the tourist sector, it is not easy to identify a sustainable development path for the tourist sector. There are conflicting objectives involved, and the definition of an unambiguous sustainable state for tourism is a thorny question. Müller (1994) has made an attempt to specify a sustainable tourism development by using a so-called ‘magic pentagon’ (see Figure 2). This magic pentagon takes for granted that sustainable tourism reflects a state of affairs where economic health, the well-being of the local population, the satisfaction of the visitors/tourists, the protection of the natural resources and the health of the local culture are in balance. Any imbalance in this prism means a distortion and will negatively impact the benefits of all acts involved.

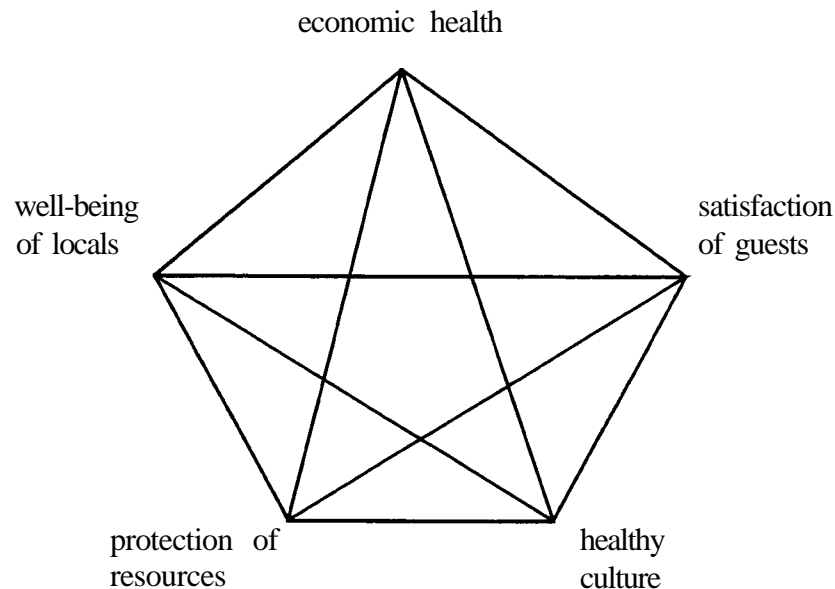


Figure 2. The ‘magic pentagon’ of sustainable tourism

It is clear that this figure is merely indicative and does not offer an operational definition. Eber (cited in Bramwell et al., 1996, p. 39) defines sustainable tourism as “tourism *which operates within natural capacities for the regeneration and future productivity of natural resources; recognizes the contribution that people and communities, customs and lifestyles, make to the tourism experience; accepts that these people must have an equitable share in this economic benefits of tourism; and is guided by the wishes of local people and communities in the host areas* “. Naturally, the achievement of a state of sustainable tourist development is fraught many difficulties, caused by the high pressure exerted by the tourism demand, the specific, egocentric nature of tourism, and the lack of ecological awareness in the tourist sector. Sustainable tourism policy challenges will be discussed in Section 5.

5. Towards Sustainable Tourism Policy

One of the most important prerequisites for attracting tourists of an area is the beauty of the natural environment. But if such an attraction force becomes successful, it has to be recognized that too large a number of tourists will damage or even destroy the natural environment, thus eroding the very basis of tourist activity. Several examples clearly illustrate

this observation, like the case of Venice: a further increase of tourists in Venice will negatively influence the tourist attractiveness. This provokes of course the question of **carrying capacity** (and related policy strategies) of tourist areas (cf. Ceballos-Lascurain, 1996; Weaver, 1998).

It is possible to avoid a situation in which the natural environment is damaged as a result of severe negative external effects from tourism? Several policy instruments can be envisaged to support the implementation of sustainable tourism. We mention the following possibilities:

1. **Information and education** from the side of the government is mainly meant to make citizens, tourists and companies aware of the environmental problems and their role in it; it serves to show how they can contribute to the solution of environmental problems. It may also increase public support for government policy. An example is information on the amount of waste tourists produce (for the tourists) and the costs they impose on society (for the local inhabitants).
2. **Subsidies** belong to the group of economic instruments; it is a market-oriented instrument. This means, for instance, that it is not prohibited to pollute, but policy activities will be (relatively) more expensive. The government can in this way stimulate environment-friendly behaviour (for instance, by imposing lower prices on tourist facilities in ecologically less vulnerable areas). **Taxation** is a similar instrument and tries to discourage environment unfriendly behaviour. The government can impose a tourist-tax ('tourist pricing') to discourage tourism in a specific area.
3. **Legal instruments** can have many forms. One of them is liability; this means that companies and citizens are liable (responsible) for damage they (or their products) cause to the environment. It is even possible to use this instrument in such a way, that companies have to prove that their products are **not harmful** to the environment. Hotels, for example, might have to prove that the tourists they receive (or their tourist facilities) do not cause any damage to the environment.
4. The government may, for example, supply public **infrastructure** like waste treatment facilities, but they can also supply an infrastructure to make it easier for the private sector or tourists to act more environment benign (e.g., supply public transport to tourist attractions). However, it is of course not certain that they will actually use it. This type of infrastructure can be supplied by the private or the public sector but also by public-private partnerships (PPPs) for efficiency reasons.
5. The government can also make **agreements** about e.g., the reduction of pollution. This instrument is more flexible than strict regulations or quota. It is however, important to point out that the government can always resort to laws, if companies are not willing to act as agreed upon (to prevent the 'prisoners dilemma'). For example, the maximum number of hotel rooms or the maximum height of hotels can be agreed on. This instrument is especially useful in 'prisoners-dilemma' situations, which often occur in the tourism development.
6. **Permissions or quotas** for the amount that a company is permitted to pollute are instruments which give the government the opportunity to determine the exact amount of future pollution. With subsidies or taxation, this is not always possible. The problem of permissions is that it can lead to market imperfections and illegal actions. A way to decrease this problem is by making the permission tradable: the permission can be sold by means of an 'auction'. The maximum number of tourists can also be fixed in this way ('tourist quota').
7. There may also be a **free market** strategy. **Free market** means here that there is no direct intervention in the market system by the government. The question is of course whether and how external costs of tourism can be internalized or computed.

8. Finally, there may be a niche strategy. **Niches** are specific fractions of the total market. A group of suppliers of tourist facilities can, for example, decide to concentrate on a certain segment of the tourist market, like nature tourism or health tourism. Such niche market policies will be discussed hereafter.

6. Market Niches of Tourism

Niche markets are a well-known phenomenon in the tourist sector. They tend to exploit the competitive advantages of specific market segments. For many tourist markets such as the Greek one, the following niches can be distinguished:

Exclusive tourism

Exclusive or top-class tourism is aimed at the arrival of high income tourists. A limited, rather exclusive market, which will not require a further extension of the present built up area, is needed. Exclusive tourism should first be implemented in the main tourist places, which have most 'B' level hotels. These existing hotels may first be upgraded to a higher category, 'A' or 'first class', through the improvement and addition of more (luxury) facilities, better services provision and higher standards of cleanliness. These improved standards of quality should also be applied to restaurants and other supporting facilities.

Agro-tourism

Agro-tourism is a kind of tourism which favours the economic activities in the agricultural sector at the same time. An important aim is to stimulate these activities in relation to the agricultural potential so that the economy of the region will not become solely dependent on tourist activities. Agro-tourism contains, for instance, the construction of tourist accommodations and facilities at farmers' places. Besides, tourists may watch the processing of farm products. Olive oil, ouzo production and leather industry are popular traditional activities to which agro-tourism may also be applied. Agro-tourism can be implemented in many rural areas.

Health tourism

The area may also develop facilities for curative tourism. For example, thermal waters (which are present in various islands) are recommended for people with rheumatic problems, bronchitis, back aches, skin diseases etc. Bath facilities, accommodations around the spa's and access roads may then be improved or established. Medical tourism seems to become an increasingly important part of the tourism market.

Adventure/sports tourism

Many regions lend themselves for specialisation in sport and leisure tourism. Several Greek Islands are ideal for sports thanks to their nature and culture. For example, the National Tourist Organisation has established different trekking routes in various areas. An information guide with the different trails is also published by this organisation. Such pathways need to be better cleaned, mapped, marked and developed. Another possibility is the organisation of wildlife/discovery tours, so that organised tourist groups can make panoramic trips and see the countryside by walking, climbing and hiking. Other examples are bird watching, camping, horse-riding, cycling, golf or tennis. Proper facilities may be developed and constructed.

Sea tourism

Greece has a strong comparative advantage in sea tourism, because it has an abundance of surrounding waters. The sea lends itself to wind surfing, water skiing, snorkelling and sailing. Establishment of modern water sports facilities may be established at some tourist resorts. Avoidance of already saturated places would be better. For yachting, the construction of modern marina's with an environmental control would be desirable.

Cultural tourism

Greece has a great variety of typical cultural, historic and natural attractions. By upgrading the level of and access to these attractions, the country will gain cultural prestige and may offer more interesting places to visit. The level of service and quality of museums might be improved. Organisation of art exhibitions or other cultural manifestations may also be an interesting possibility. The typical traditional villages also require protection. The materials used and the design of buildings in such places may be based on local traditions. The exercise of cultural handicrafts might be encouraged.

Winter tourism

Winter tourism may be encouraged to realise a year round tourist product. This is also related to targeting winter migration to the island by offering facilities to elderly people. An easily attainable island in the winter months and the presence of qualified tourist services are a prerequisite. An advantage of winter tourism is the creation of jobs in winter time, so that seasonal unemployment is reduced.

Education tourism

Tourism may also be developed on the basis of meetings, conferences congresses or symposia. The construction of congress centres would then offer a new opportunity. Organisation of language or cultural courses may also be considered.

These various tourism options seem to be the most feasible ones and do not exclude each other. The development of a mix of different options is thus possible and desirable.

Environmental instruments in the tourist sector should be designed to facilitate the integration of environmental policy with other policies, such as regional development policies. Removal and correction of administrative and governmental intervention failures are therefore of importance for a proper integration of environmental policy with sectoral policies. This may end up in a better synergy and coordination of tourist activities with other socio-economic activities.

A problem in achieving sustainable tourism development is the lack of experience, knowledge and financial resources, and the limited involvement of local authorities (see also Briassoulis and Van der Straaten, 1992). It is important that decisions which influence life at the local level will be taken at the lowest possible level of governance. Knowledge of the area involved and its problems increases local support in the development of a suitable action plan for sustainable tourism. The role of the local authorities should therefore be strengthened. Education, information, promotion and training are therefore important measures in this context. Sustainable tourism is by no means a non-viable option.

The previous observations have highlighted the increasingly important role of tourism in the age of globalisation. Tourism has become a 'normal' part of a developed economy and will continue to do so in the future. As a consequence, our world is getting smaller all the time.

This megatrend is enforced by new technological advances which will be outlined in the next section.

7. Tourism, Technology and the Region

It is a well-known fact that the revenues in the transportation sector - an activity meant to physically transport people and goods - are rather modest. In fact, the transportation sector - interpreted in the above mentioned limited sense - is just like the agricultural sector a infra-marginal economic activity. However, in a modern economy the strategic importance of the transportation sector and the supra marginal profitability of parts of this sector are dependent on the logistic management of the sector. In other words, the physical movement is not the main source of revenues, but the non-physical organisation and coordination of the sector based on modern telecommunication, telematics and logistic services. The latter branch of economic activity does not constitute a low-skilled segment of the labour market, but is determined by highly educated, specially trained and internationally-oriented employees. Thus, distribution has become more important than material production and transportation.

The same observation applies to other economic sectors, like agriculture, banking, computer manufacturing and repair services. The 'deskilling' hypothesis which used to be fairly popular in the 1980s has turned out to be wrong: in all sectors the highest value added is created in the upper segments of the labour market.

This observation applies also to the tourist sector. This sector started as a simple, relatively low-skilled segment of the market by offering accommodation and related services to travellers. This traditional picture has drastically changed in the past years. First, the economic prosperity has created a relatively large share of leisure time and discretionary income, so that more people could enjoy the benefits and pleasure of international tourism. Second, the world-wide mobility movement has drawn the attention of potential customers to distant and unknown destinations. And finally, modern telecommunication means bring attractive tourist destinations directly in the living rooms of potential travellers. This means that welfare rise and modern information and communication technology may be held responsible for the global drive towards mass tourism.

At the same time a drastic restructuring of the tourist industry itself has taken place. First, a concentration in the sector has occurred, witness the emergence of large scale international hotel chains. Secondly, as a result of those economies of scale a further rationalisation has taken place, where electronic booking and advanced pay systems have taken over the role of the conventional handicraft nature of the hotel business. But more importantly, the organisation of tourism has come in the hands of a few large-scale tour operators who govern a significant part of the international market. These operators form a critical intermediate segment between demand and supply they do not only organize packages of trips for the traveller, but they dominate increasingly the hotel accommodation market as well as the tourist transport market. By a keen combination of various opportunities and by using the modern information and communication technology as a spearhead, they are in a position to control large parts of the travel agency market and the transport market for tourists. As a consequence, both tourists carriers and hotel owners tend to become increasingly dependent on vested interest of a highly qualified and technologically well developed group of tour operators. The question which may be raised now is: how can regions exploit the opportunities of the modern information and communication sector, without falling in the hands of the monopoly power of international tour operators?

It seems thus that a package of measures can be envisaged to nurture indigenous strength and to seek for cooperation at the regional level. Elements of such a package are:

- increase the quality of supply of tourist facilities by addressing in particular the environmental quality of the area
- coordinate the information on the supply of tourist facilities (hotels, but also culture and nature) at the regional level, so that the region can be conceived of as the supplier of a strong package of attractive tourist facilities
- invest in sophisticated regional information and communications technologies (e.g., on electronic booking systems, internet information on the area via a website page)
- organize the regional forces so that a uniform tourist image of the area is shaped for the international traveller which may favour an inflow of tourism without being dependent on international tourist operators.

Thus there is a main role for marketing the tourist product by creating new customers through a balanced combination of product, price, distribution and communication services, as such services are often more effective and efficient than other forms of marketing. It is recognized in the tourist sector that markets gain in competitive advantage with improved communication, due to better information access and distribution as well as a more proper response to market signals.

It is clear that the tourist sector may be a source of important revenues, but a significant part of these revenues is often lost for tourist areas, because either the owners of tourist facilities live outside the area or the tourists pay their trip and accommodation via tour operators abroad. It is also noteworthy that the tourist income multipliers show a formidable range of variation among different tourist areas. It seems plausible that the organisation of the tourism market is to a significant degree responsible for these differences. This will be further illustrated and analysed in the next section.

8. Assessment of Regional Tourist Income Multipliers

International tourism may broaden and deepen the supply side of an economy as a result of the additional and probably more diversified demand generated by it. Impacts of the tourist sector on the various domestic economic sectors can be subdivided into (stimulating) effects on production, gross income and employment. In as far as more sectors benefit from activities in the tourist sector, the notion of multiplier effects initiated by incoming tourist expenditures is relevant. A multiplier value may be interpreted as a stimulus-response ratio of effects vis-à-vis the initial (monetary) injection. The quantification of these effects by means of so-called tourist multipliers is a modification of the standard Keynesian multipliers ("snowball effects"), developed in a general context, for the tourist sector. The magnitude of these multiplier effects is determined by the way in which initial tourist receipts filter throughout the economy stimulating linked sectors on their way. Tourism demand is met by the output of tourist sectors, which again require deliveries from linked sectors and so forth.

It is without any doubt true that tourism is one of the world's fastest growing industries. Regional impact assessment of tourism is usually based on multiplier analysis which aims to depict all (direct, indirect and induced) consequences of additional tourist expenditures (see Nijkamp and Baaijens, 1998). The chain of effects after an initial impulse is often described by means of an input-output model, incorporating all transactions between relevant economic sectors. The environment (and, in general, the resource sector) can also be included as one of the inputs or outputs related to the production of goods and services. In this way, the system-wide impacts of tourist expenditures in a regional economy can be traced (see also

Armstrong and Taylor, 1993). A more simplified approach to the estimation of regional tourist multipliers has been developed by Archer (1976) who made a distinction between tourism-aligned and non-tourism-aligned sectors. But even in that case the calculation of multipliers is a tedious and expensive task. We will emphasize here the need to undertake cross-national comparative studies on the values of tourist income multipliers on the basis of principles of meta-analysis.

The start of a meta-analytical exercise is to collect documented studies on income multiplier effects of tourist areas, notably regional economies. In a recent study (see Nijkamp and Baaijens, 1998), we were able to identify a sample of 11 relevant and officially published case studies on tourist regions from different sources and covering different years (see Table 1). The information provided by the study reports served as the principal data base in the meta-analysis. Clearly, not all relevant data were directly available for a comparative quantitative analysis as several data was more or less hidden in the study reports. Therefore, a systematic inventory of all relevant information had to be made. This investigation was made with the help of a systematic list of relevant topics, by making also use of a general framework of economic meta-analysis (see for details van den Bergh et al., 1997). A closer investigation of the study reports led to a systematic overview of the relevant information contained in the study reports. This overview however, appeared to be far from complete, as each individual study contained differences in approach and viewpoint, so that the similarity in the information provided left much to be desired. As a consequence, the meta-analysis was restricted to information that was known for most geographical areas considered. The final selection of the cross-sectional case-study features is contained in Table 1. Ideally, one would wish to have more specific economic variables, such as the value-added ratio or the import ratio, or more specific tourist information such as tourist days or purchasing power parity data. Unfortunately, these data were not available to a sufficient extent in the study reports to warrant a solid meta-analysis. Clearly, missing information limits the use of cross-sectional comparisons.

The range of variation in the multiplier values appears to be rather significant. Consequently, it does not make sense to make an average estimate of such a multiplier of any new case study. Rather, it is necessary to link the value of these multipliers to differences in background variables using meta-analytical techniques. This meta-analytic experiment led to quite some interesting results.

Clearly, the application of statistical meta-analytical techniques for the assessment of the tourist income multiplier incorporates significant differences with the application of conventional meta-analytical techniques to studies which deal with a controlled experimentation model. In our case of 11 tourist studies, we do not have a controlled experiment on sampling among households, tourists and other economic sectors in the regional economy (the studies are given). Furthermore, the tourist analysis is carried out on a meso level of aggregation, and finally, in these studies the (questionable) assumption is made that the measured (or estimated) multiplier (via the input-output or the Archer model) is also the real one and not subject to stochasticity

We will carry out regression experiments in three steps:

- a **base model** where tourist multipliers are related to geographic characteristics such as surface and population. The area and the population size of the region serve as indicators for the diversity of economic activity in the region.
- a **meta model** where the typical meta variables are included in the explanatory analysis, e.g., the source of the study, the year of collection of data, the analysis method used. Meta variables refer to methodological choices made in the original studies; their values are largely independent from the object of the study in the meta-analysis.

- a **tourist model** where the size of the multiplier will be linked to incoming tourist flows.

Table 1. Concise survey table for meta-analysis for tourist areas

	DOC	GEO	YEA	REM	TIM	ATR	POP (x 1000)	SUR (x 1000)	TOA	LCS	POA
Bahamas	Dr	G _g	1976	R _a	0.7815	A _c	189.9	11,401	1388.0	75.8	y
Bermuda	Dr	G _g	1975	R _a	1.0996	A _c	56.6	107	511.4	86.6	n
Singapore	D _j	G _i	1983	R _{io}	0.9393	A _c	2501.0	625	2856.6	?	Y
Turkey	D _j	G _c	1981	R _{io}	1.9809	A _m	45.529.0	779.425	1,460.0	?	Y
Niue	D _j	G _i	1987	R _a	0.35	A _n	2.0	258	1.8	78.0	n
Cook Islands	D _j	G _g	1984	R _a	0.43	A _c	18.0	236	25.6	40.0	n
Kiribati	4	G _g	1987	R _a	0.37	A _n	66.0	270	2.0	?	Y
Tonga	4	G _g	1987	R _a	0.42	A _c	95.0	699	16.1	24.2	y
Vanuatu	4	G _g	1987	R _a	0.56	A _m	140.0	12,200	17.5	52.0	y
Alonnisos	D _b	G _i	1989	R _{io}	0.489	A _c	1.55	83	20.0	35.9	n
Okanagan	D _j	G _r	1977	R _{io}	0.713	A _n	?	21,813	1,400.0	?	n

Legend:

- Type of documentation (DOC):
Dr: research paper
D_j: journal
D_b: book
- Geographic feature of the area (GEO):
G_s: single island
G_g: island group
G_r: region
G_c: country
- Year of collection of data (YEA)
- Research method (REM):
R_{io}: input-output model
R_a: Archer method
- Estimated value of the average tourist income multiplier (TIM)
- Type of tourist attractiveness (ATR):
4 : sun
A_c: culture
A_n: nature
A_m: mixed
- Quantitative and qualitative features of the tourist area:
Population size (POP)
Surface (in km²) (SUR)
Tourist arrivals (TOA)
Share of arrivals from most important country of origin in total number of arrivals (LCS)
Political autonomy (POA)
- Population size (POP)
- Surface (in km²) (SUR)
- Share of arrivals from most important country of origin in total number of arrivals (LCS)
- Political autonomy (POA)

Base model

In the base model the tourist multiplier is, in general, positively correlated with the (natural logarithm of the) size of the population.

Next, also the size of the area has been investigated. The regression results appear to support the hypothesis that regions with a larger surface have a higher tourist multiplier.

Finally, the impact of the degree of political autonomy has also been examined. In contrast to our hypothesis, we find a significant negative relationship between the income multiplier and political autonomy.

Meta model

The meta model has been experimented in combination with population size. We find that the impact of population size in the meta model is again significantly positive that estimates of multipliers, published in scientific journals, appear to be lower than those published elsewhere; there is apparently, on average, a tendency towards some overestimation in less official publication channels.

Next, it is also noteworthy that the type of model used has an impact on the results: the Archer model tends to yield, on average, lower values of the tourist income multiplier than the full input-output model.

Tourist model

In the final stage we investigate the impact of tourism-specific variables, in addition to the previous significant variables of population size. There is some indication that higher tourist arrivals lead to a higher multiplier value. The impact of the tourist index (ratio of incoming tourists to population size) appears to be positive.

It should be noted that the results are merely indicative, but nevertheless interesting, as they generate some plausible ideas on the impacts of base, moderator and tourism-specific variables, which may be transferred to other situations.

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